2 Sheets--Sheet 1.

W. A. BOWEN.

Washing-Machine.

No. 162,996. Patented May 11, 1875.

Fig. 1

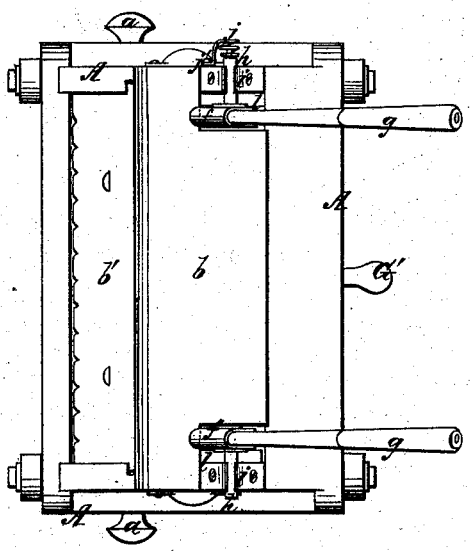


Fig. 2

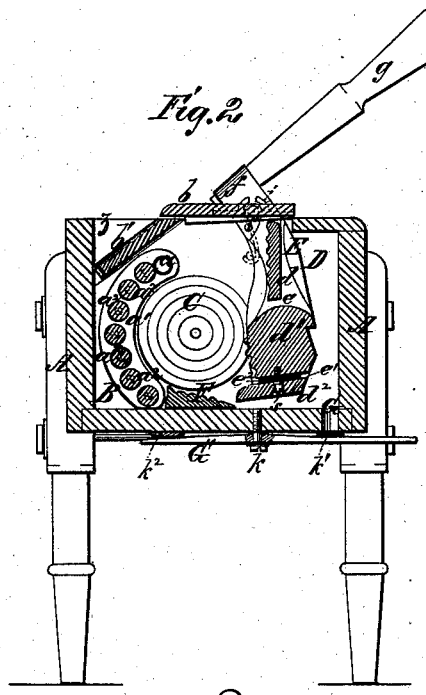
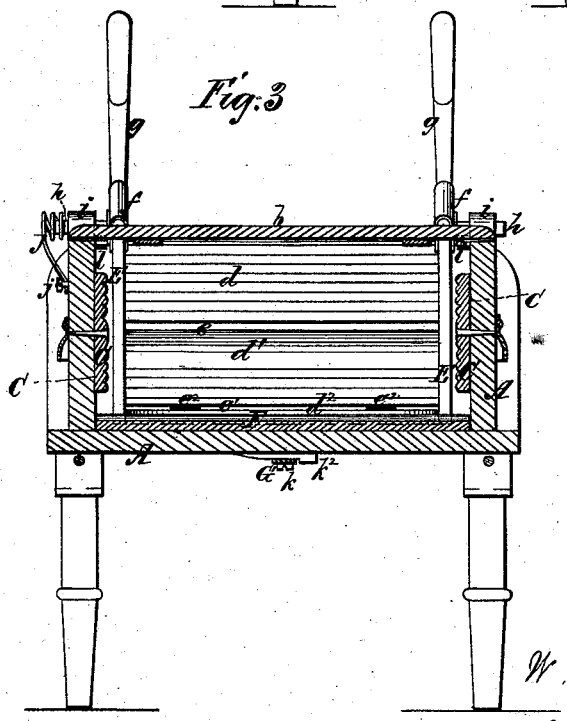


Fig. 3



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J. N. Campbell.

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his attorneys.

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2 Sheets--Sheet 2.

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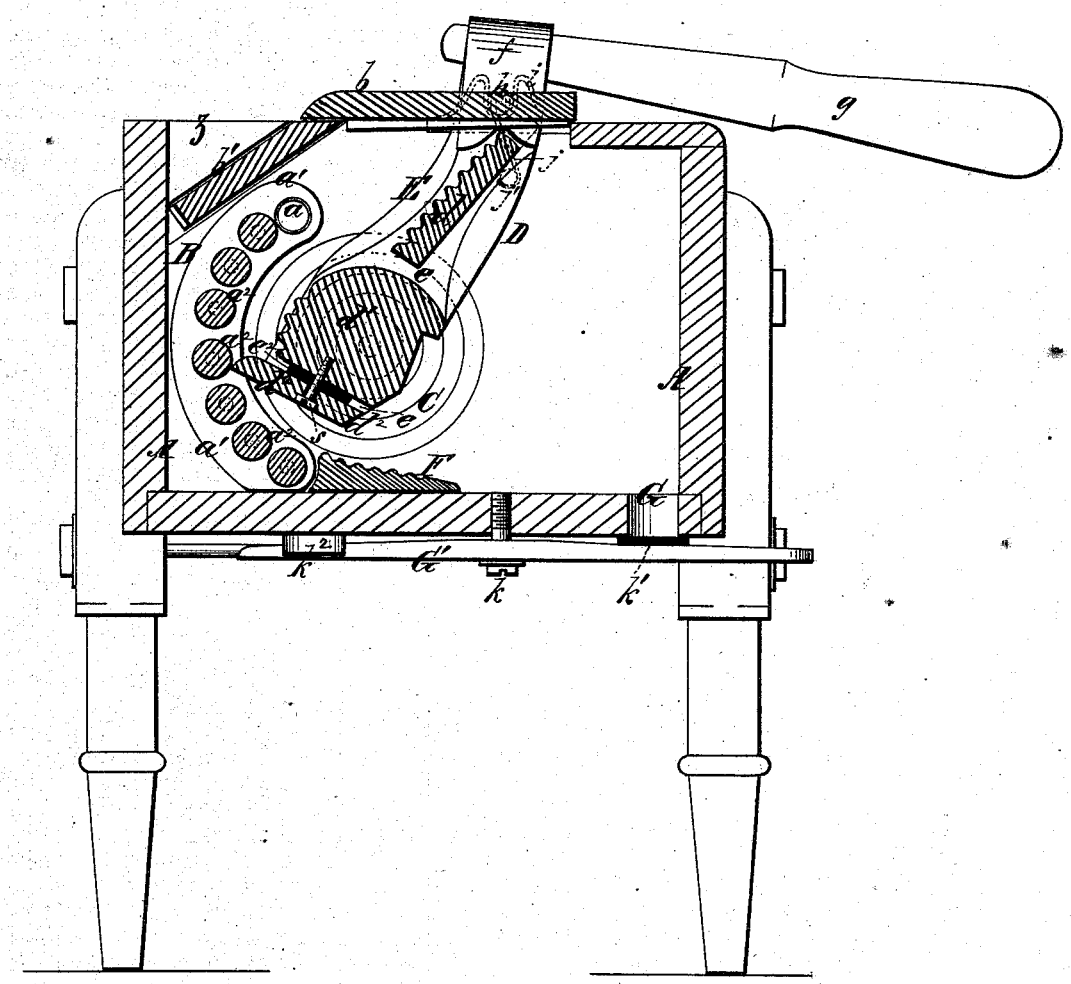
Fig. 4



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UNITED STATES PATENT OFFICE.

WILLIAM A. BOWEN, OF RACINE, WISCONSIN.

IMPROVEMENT IN WASHING-MACHINES.

Specification forming part of Letters Patent No. **162,996**, dated May 11, 1875; application filed February 26, 1875.

To all whom it may concern:

Be it known that I, WILLIAM A. BOWEN, of the city and county of Racine, and State of Wisconsin, have invented a new and Improved Washing-Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a top view of my improved washing-machine; Fig. 2, a vertical transverse section of the same, the parts being in their normal position; Fig. 3, a vertical longitudinal section. Fig. 4 is a similar view to Fig. 2, except that the handle is lowered, and the parts connected to the same are in the position they occupy when the forward and upward movement is completed.

The nature of my invention consists in certain constructions and combinations of parts, as will be hereinafter described and specifically claimed, whereby the washing-machine is made more convenient of management and effective in its operation upon the clothes which are acted upon by it.

In the accompanying drawings, A represents the ordinary box or tub, mounted upon legs, and fastened together by means of screw-rods and nuts, so as to be made watertight. Within this box, and at its forward end, a segmental wash-board, B, is arranged and suspended by pivot-pins *a*. This wash-board is constructed with side pieces a^1 and cylindrical rollers a^2, which latter are placed equidistant apart upon the side pieces, so as to allow the passage between them of suds and water during the operation of washing. On the ends of the box A, and just in rear of the wash-board B, are placed circular projecting wash-boards C, having circular fluted rubbing-surfaces. These circular projecting wash-boards assist very materially in the cleansing of the clothes during the process of washing, and allow the water to circulate freely. At the rear end of the box or tub a combined vibrating pounder, wash-board, and lifter and rubber is hung on short journals *h h*. It is formed with side pieces E E, which serve to hold the parts together, and as the means by which to suspend them. The portion *d* hangs vertically when the machine is not in use, and it has a corrugated surface, upon which the clothes are rubbed and cleansed during the operation of the machine. Below this vertical portion, and extending out forward of it, is a segmental pounder, d^1, which has its front curved surface partly corrugated and partly plain, as shown in the drawings. Between this segmental pounder d^1 and the base of the vertical wash-board *d* a space, *e*, is left for the passage of the suds back and forth during the operation of washing clothes. Beneath this pounder a yielding rubber or lifter, d^2, is constructed, and connected to the pounder by means of guide-pins *s s*, which pass through narrow flat india-rubber springs, e^2, placed between the pounder d^1 and the rubber d^2, as shown. This board is free to move toward and from the pounder until the elasticity of the springs is exhausted or the heads of the pins stop it. e^1 is a water-circulating opening between the segmental pounder d^1 and the lift-board d^2. On the upper end of the supports E E sockets *f f*, of U shape, are rigidly secured. Into these sockets levers *g g* are inserted for operating the machine. The journals *h h*, which extend out from said sockets *f f*, have their bearings in boxes *i i*, formed on the top of the ends of the box A. On one or both ends of these journals a coiled spring or springs, *j*, are confined, said springs having one of their ends looped loosely around pins *j'*, set in the ends of the box A forward of the journals *h h*. These springs during the operation serve to return the vibrating wash-board D and its connections back to its normal position when the pressure is withdrawn from the handles. At about the center of the box A, between the semicircular wash-board B and the combined pounder, wash-board D, and lifter and rubber, an inclined fluted wash-board, F, is placed, so as to rest upon the bottom of the box or tub A. Over this board clothes are moved back and forth and rubbed and cleansed by the action upon them of the vibrating pounder, wash-board, and lifter and rubber. At the bottom of the box A an opening, G, is provided for the removal of the suds or water when the operation of washing is finished. This opening is closed by a lever, G', which is pivoted at or about the center of the box, as at *k*, and provided at one end

with a rubber valve, k^1, which covers the opening G. The movement of this lever is governed by a stop, k^2, fastened to the bottom of the box A, and thus the complete covering of the opening G is insured. The box A is provided with cover-sections $b\,b'$, so as to prevent the agitated water from splashing when the operation of washing the clothes is performed. The cover-section b is made with V-shaped notches in its lower edge, which allow the passage of the water through them from the space z, in which a wringer is hung for convenient use. Between the sides of the supports E E of the combined vibrating pounder, wash-board, and lifter and rubber D and the inner sides of the box A are rubber bearings $l\,l$, to prevent the displacement of the combined pounder and wash-board, lifter, and rubber, as shown.

The wash-boards B, D, and F can all be removed for any purpose desired by removing the cover-sections $b\,b'$, detaching the springs j from the pins j', and withdrawing the pins $a\,a$, all of which can be done with speed and convenience.

The fluted board d is used as a hand-board for light articles by adjusting it to the position shown in Fig. 4, and locking it in this position by inserting the ends of the handles into the opposite ends of the sockets, (which are made open at both ends,) so that the handles stand across the top of the box A, and are restrained from descending by said box.

What I claim is—

1. In a washing-machine, the vibrating wash-board D, composed of the fluted portion d, the segmental-grooved and plain-surfaced portion d^1, yielding, lifting, and pressing portion d^2, side pieces E E, short journals $h\,h$, and sockets $f\,f$, in the manner and for the purpose described.

2. In combination with bearings $i\,i$, cover-sections $b\,b'$, rubber bearings $l\,l$, and board B, constructed with the portions $d\,d^1\,d^2$, and with side pieces E E, journals $h\,h$, sockets $f\,f$, and handles $g\,g$, in the manner and for the purpose described.

3. The combination of the circularly-corrugated end pieces C, the segmental roller wash-board B, the vibrating pounding, washing, and rubbing and lifting board D $d\,d^1\,d^2$, springs e^2, passages $e\,e^1$, inclined fluted bottom board F, cover-sections $b\,b'$, sockets $f\,f$, journals $h\,h$, spring j, and handles $g\,g$, all constructed in the manner and for the purpose described.

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